Ministry of Environment

Investment Plan for Rehabilitation at Ekeder

No.	Description of Master Plan components	Investment Required (Million JD)	Remarks	Starting Time
FIRST PHASE				
1	Construction of first new solid waste cell, capacity for 5 years, including some essential infrastructure works	8	Infrastructure works such as new administration offices and new main entrance gate—preliminary design complete in the master plan, detail design and tender documents will be ready by May 2015	Year 0
2	Construction of the new Zibar Lagoon	2	Including receiving area and pretreatment, design and tender documents are ready	Year 0
3	Maintenance of existing machinery	0.5	A list of existing equipment and their technical status is available	Year 0
4	Procurement of new operating equipment	1.5	List of required equipment is available	Year 0
5	Procurement of equipment for drying lagoons	0.14	Procurement of two drying units and provision of three-phase electrical power connection	Year 0
6	Tendering for MRF/RDF Plant	Private Sector	RFP will be ready by May 2015	Year 0
7	Construction of waste to energy research unit for disposal of old liquid Zibar	Private Sector	Any innovative feasible and attractive solutions should be contracted	Year 0
SECOND PHASE				
1	Remediation of 50% of the old liquid lagoons	1.8	By investing in the drying equipment as proposed by the consultant and/or investing in any proven innovative waste to energy unit Including soil regeneration and site preparation for second solid waste cell	Year 2
2	Construction of the full infrastructure works	TBD	Exact elements will be defined by May 2015	Year 3
3	Construction of the second new solid waste cell for the next 5-year phase (year 6 to 10)	6		Year 4
THIRD PHASE				
1	Remediation of the remaining old liquid lagoons	2.0	100% transfer liquid waste lagoons into site for solid waste cells	Year 4
2	Construction of the third new solid waste cell for the next 5-year phase (year 11 to 15)	6		Year 8 to Year 9
3	Procurement of new operating equipment	2.0		Year 9

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Ekeder Site Master Plan and Investment Needs

USAID Water Reuse and Environmental Conservation Project team takes water samples at Ekeder

Leachate seeps through solid waste unlined cell

Challenge

The industrial wastewater lagoons and the unlined Municipal Solid Waste (MSW) cells at Ekeder make it one of Jordan's most polluted sites, an "environmental hot spot" that has captured international attention. The site presents health risks to area residents and is a threat to Jordan's water supply. Rehabilitation and expansion of the site is urgently needed; cleaning it up will reduce pollution, and redeveloping it as a lined solid waste landfill with safe material recovery capabilities will support the local economy.

Furthermore, liquid wastes now going to Ekeder have to go somewhere, so alternatives must be provided for legal, safe disposal. Offsite improvements needed to divert liquid waste streams away from Ekeder form an integral part of the planned site remediation.

Environmental issues in Jordan are complex, and responsibilities cross multiple agencies and entities. This is evidenced clearly at Ekeder. These problems will not be solved one isolated piece at a time; they call for big-picture, integrated solutions.

USAID Initiative to Date

USAID's Water Reuse and Environmental Conservation Project has prepared a master plan and tender documents to expand the site for additional MSW cells, build a new Material Recovery Facility (MRF), remediate and redevelop the lagoons, and provide responsible alternatives for industrial liquid waste disposal.

The Prime Minister approved a comprehensive plan presented by the Ministry of Environment (MoEnv), detailing the inter-related projects and the agency in charge of each. The responsible agencies—MoEnv, Ministry of Municipal Affairs (MoMA), Ministry of Public Works (MPW), and the Ministry of Water and Irrigation (MWI)—are working to solve the problem.

In July 2014, the MoEnv prepared a comprehensive plan to implement the decisions made by the ministerial steering committee, detailing the inter-related projects and the agency in charge of each.

Next Steps

Municipal solid waste

- Design and construct new landfill
- Develop a new material recovery facility as public-private partnerships

Zibar

- Construct new Zibar (olive oil waste) lagoon on WAJ-owned land
- Clean and maintain old Zibar lagoon

Other industrial wastewater activities

- Redirect textile industry waste to All-Hassan Industrial City
- Treat other industrial wastewater—construct plant(s) or expand existing plant

Liquid sludge activities

- Install dewatering at WWTPs in north
- Construct new sludge pond on WAJ-owned land

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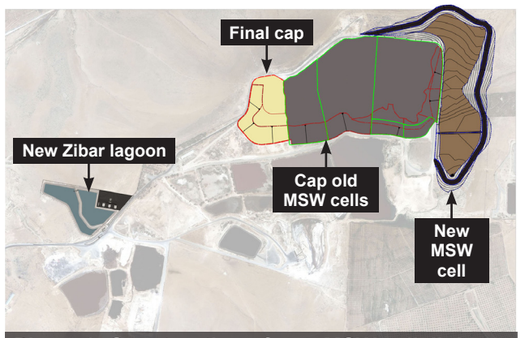
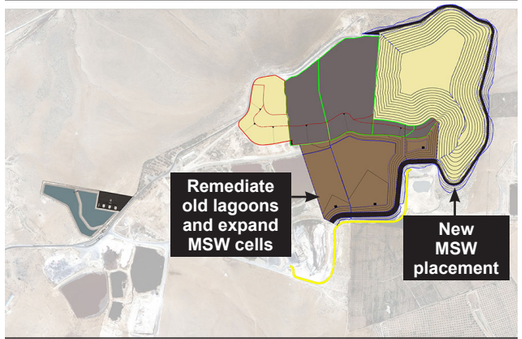
Water Reuse and Environmental Conservation Project

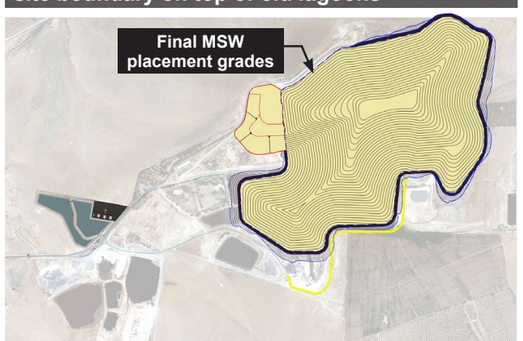

Current Conditions



Phase 1: Construction of new MSW cell, lining on top part of old landfill and new Zibar lagoon



Phase 2: Expansion of MSW cell within current site boundary on top of old lagoons



Phase 3: Continued expansion within current site boundary (total service life 15 years)

Ekeder Site Master Plan


1 Material recovery facility is a safe alternative to scavenging


2 Liner installation for closure of old landfill cells


3 Site remediation using solidification / stabilization for the old lagoons


4 Liner system installation for new landfill cells

New material recovery facility (MRF) → 1

Liner on top of old landfill in preparation for additional waste fillings → 2

3

4

New lined MSW cell on new land

New lined Zibar lagoon

Relocated site gate

New site offices

Ekeder Master Plan Features

- Extends service life for 15 more years
- Converts site to lined sanitary landfill
- Achieves sustainable MSW management via MRF
- Keeps few lagoons for emergencies

Ekeder development Master Plan includes: new MSW cell, new Zibar lagoon, new MRF, and capping of old MSW cell.